

FIG. 1

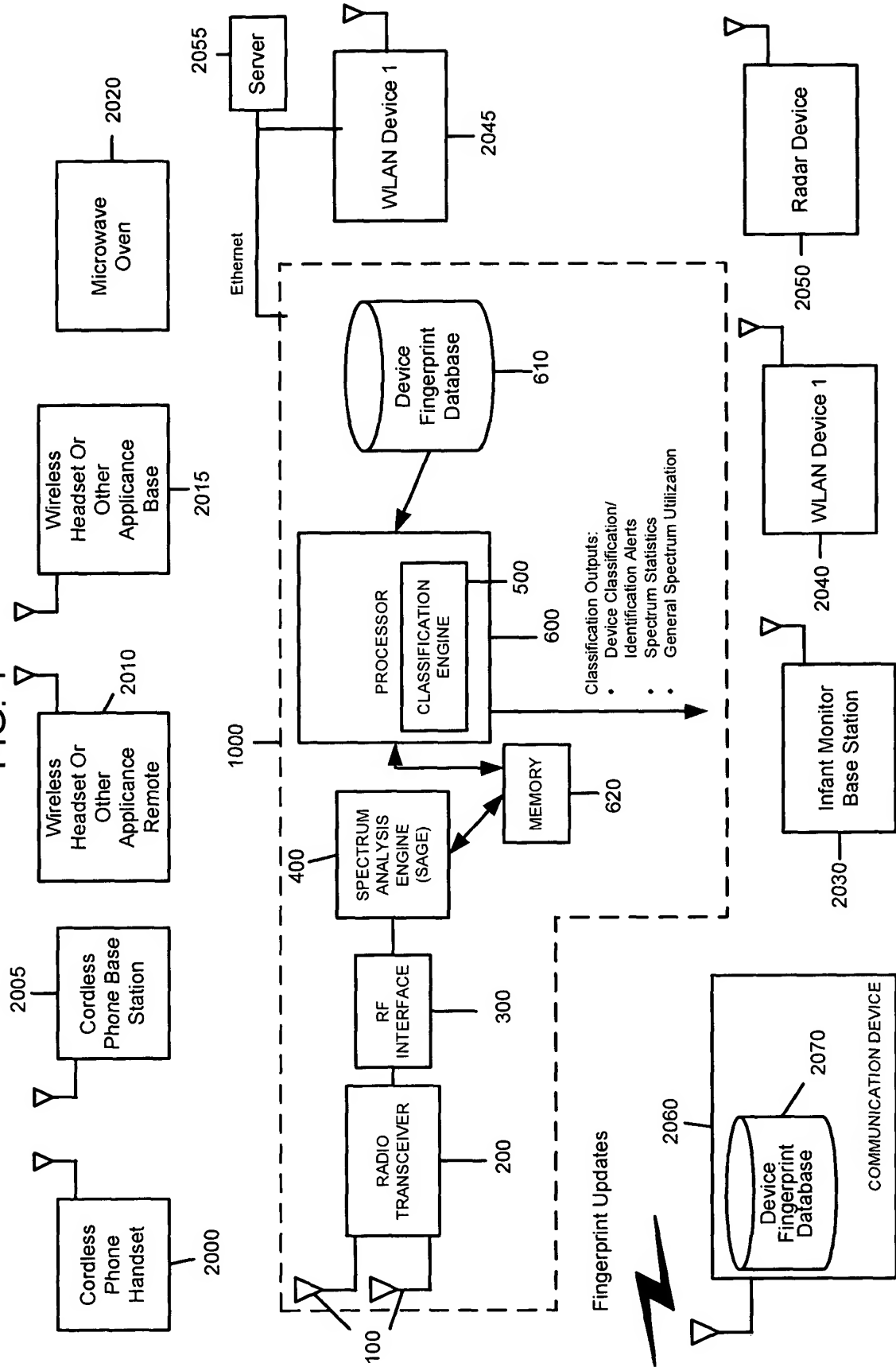


FIG. 2

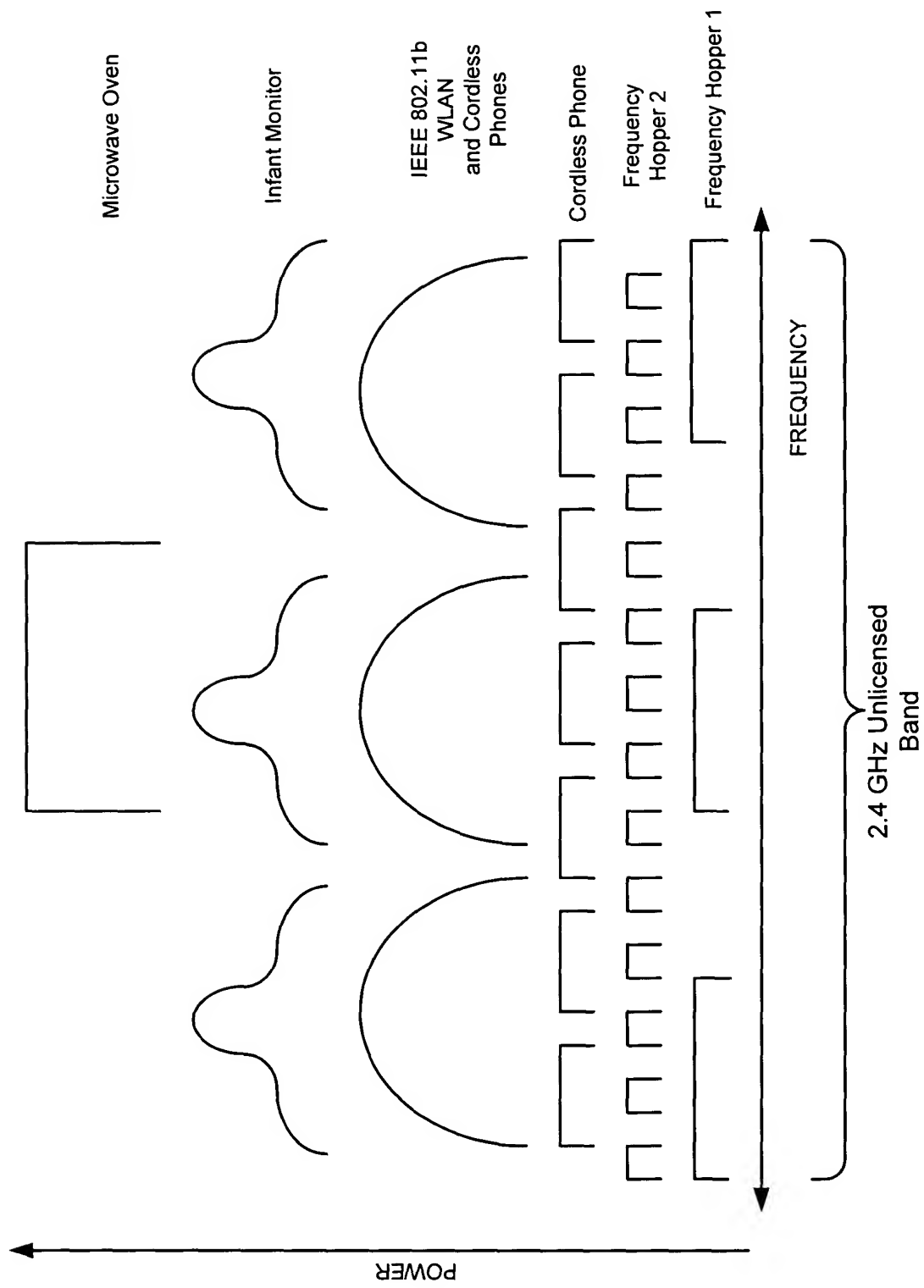
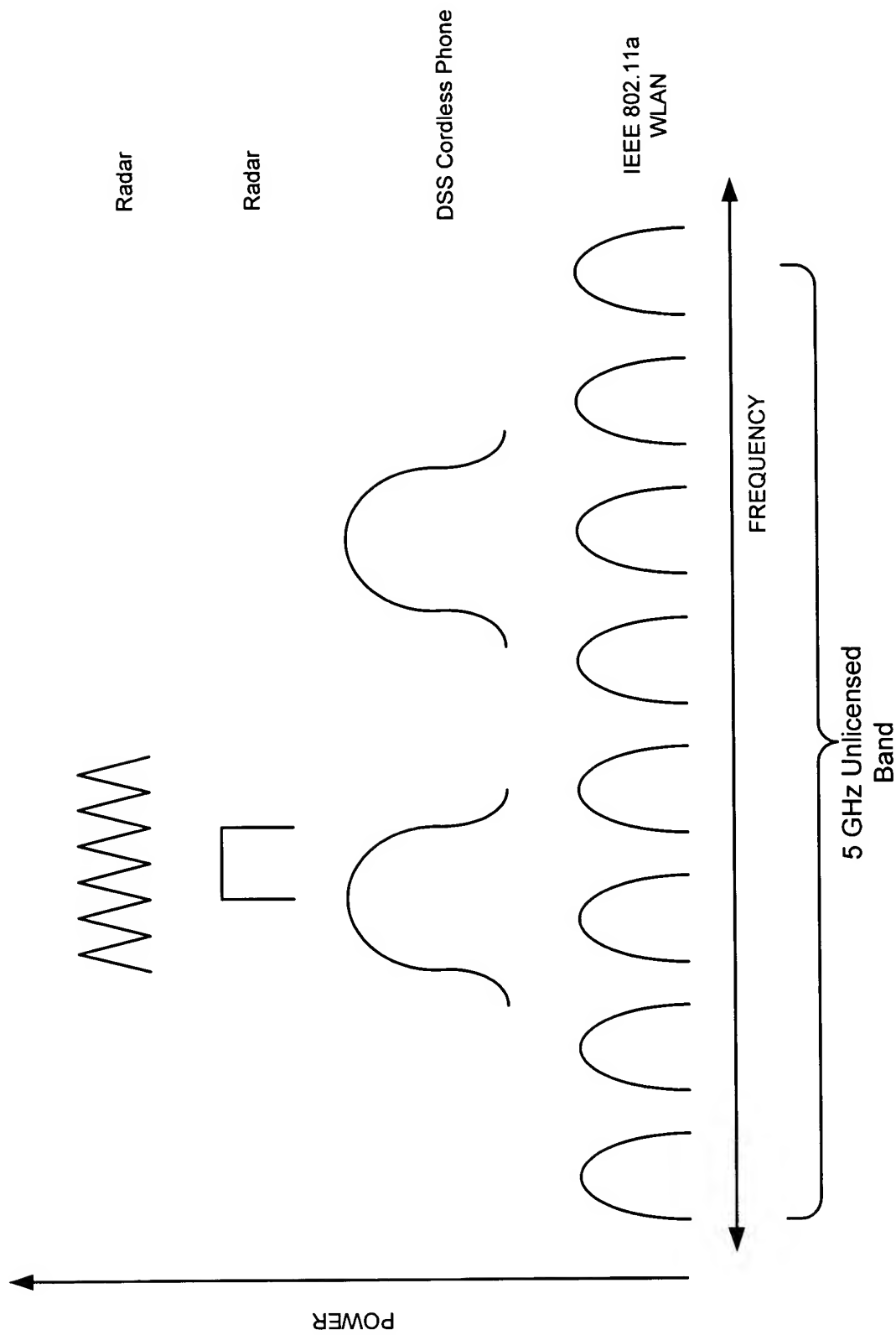


FIG. 3



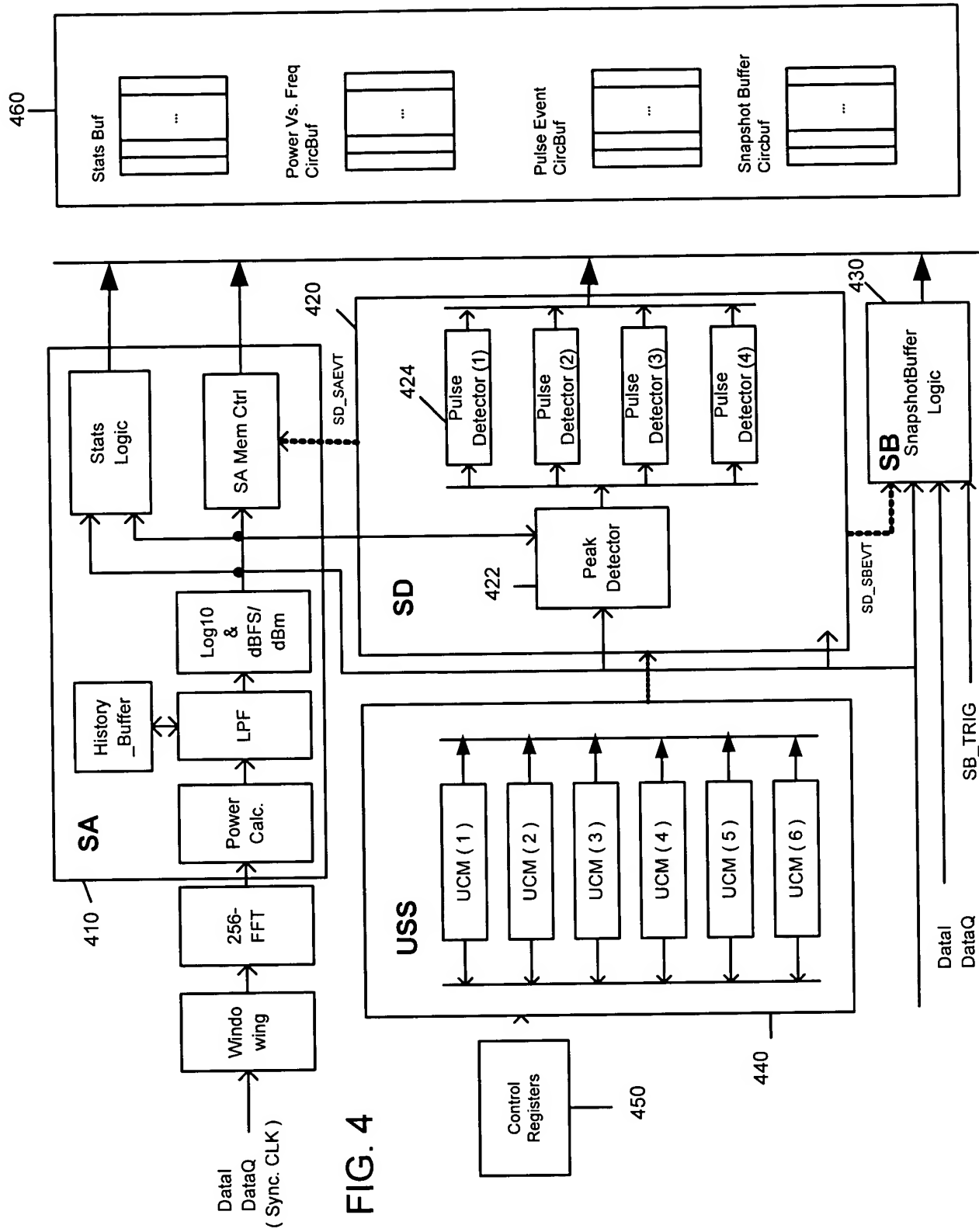


FIG. 4

FIG. 5

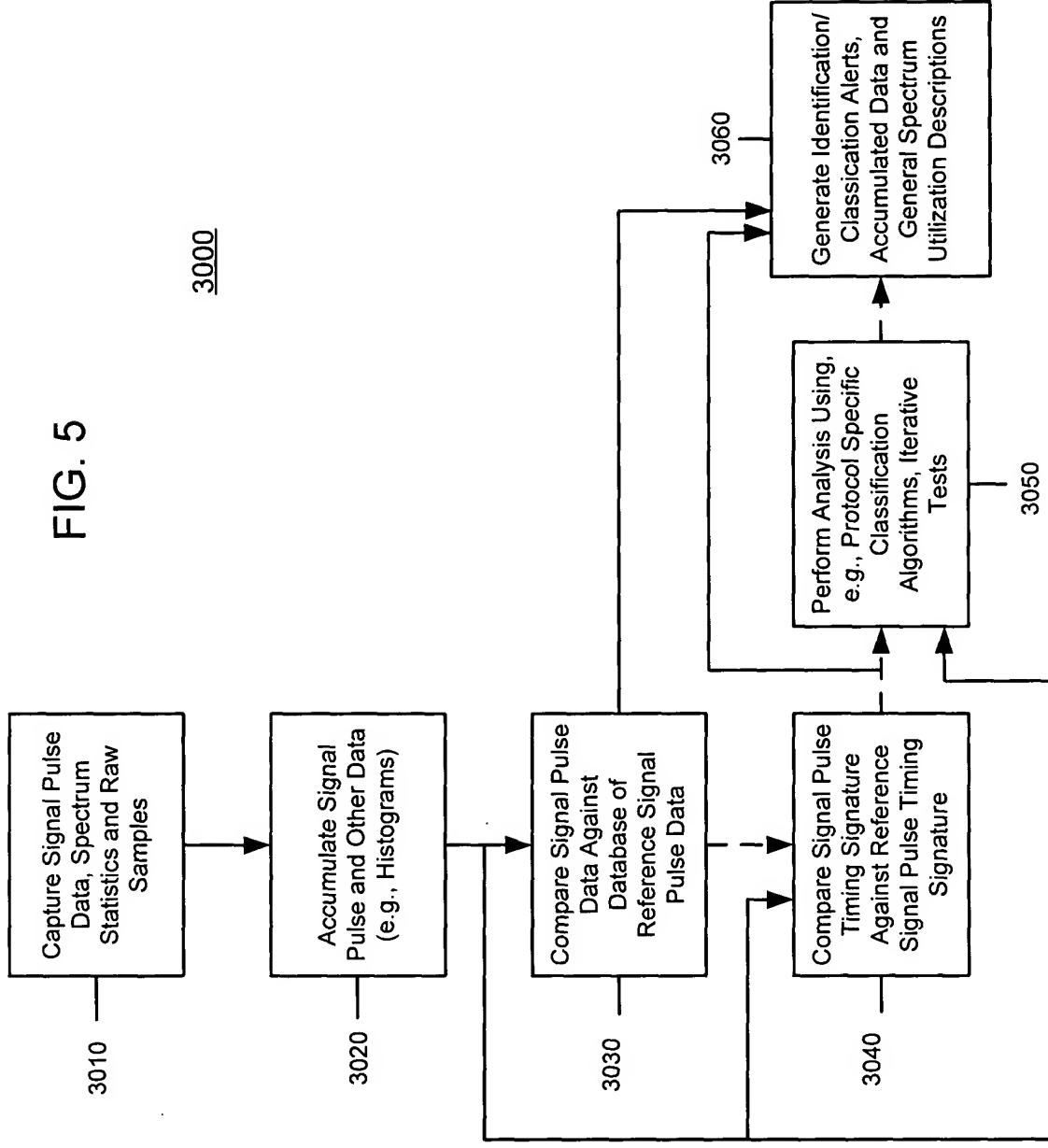
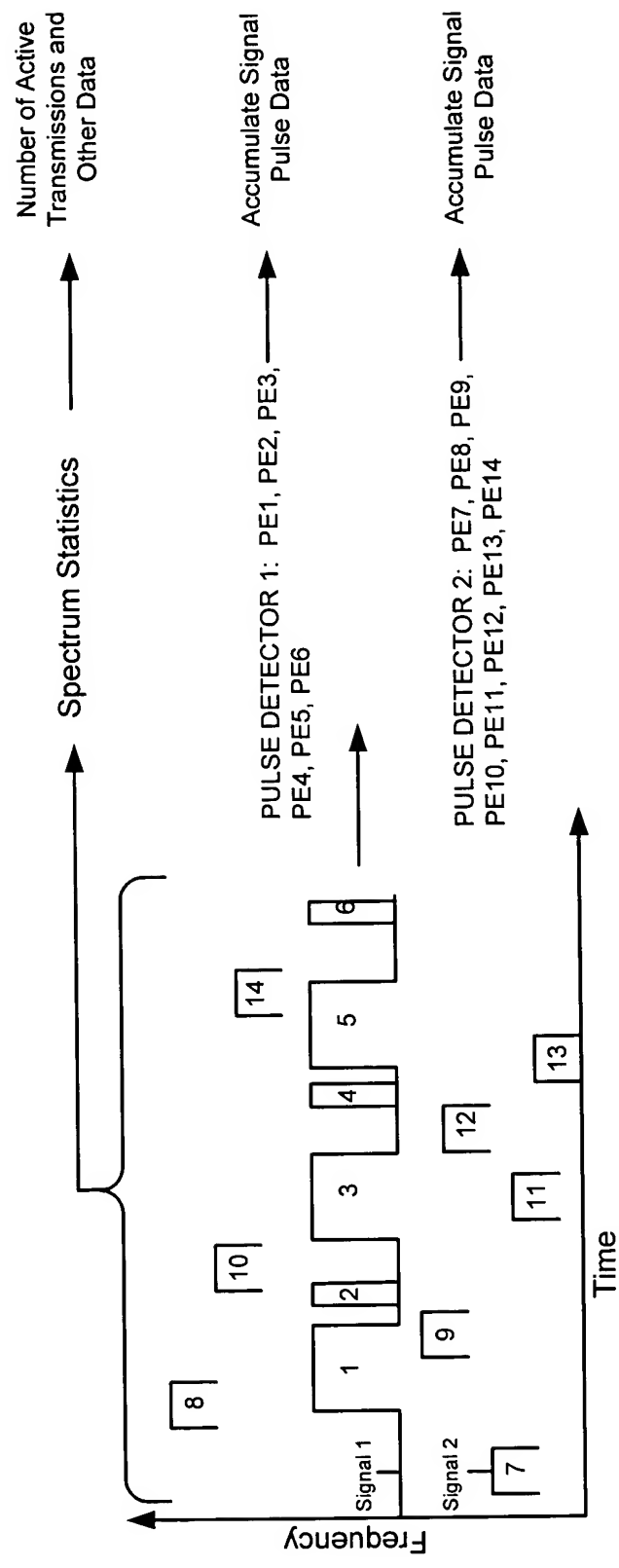
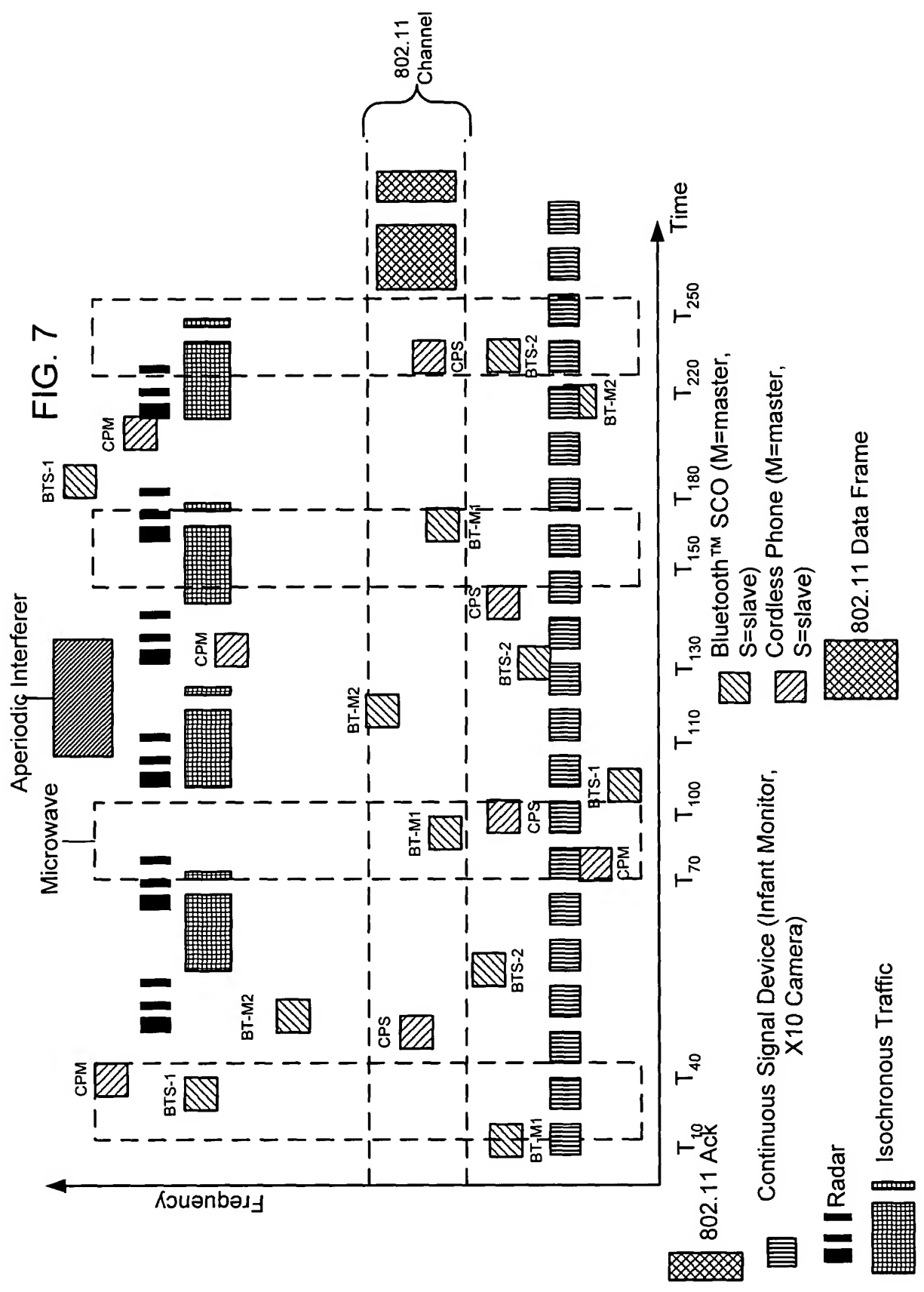


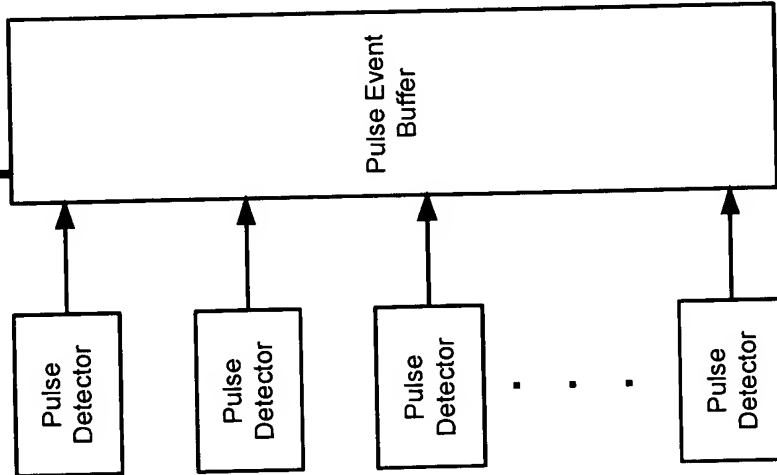
FIG. 6





New Pulse Events

FIG. 8  
Pulse History Table in Memory



Pulse Start Time	Pulse Center Frequency	Pulse Duration	Pulse Bandwidth
0 $\mu$ s	2.450 GHz	7000 $\mu$ s	4000 kHz
0 $\mu$ s	2.300 GHz	400 $\mu$ s	1000 kHz
0 $\mu$ s	2.600 GHz	700 $\mu$ s	1000 kHz
625 $\mu$ s	2.500 GHz	400 $\mu$ s	1000 kHz
3750 $\mu$ s	2.700 GHz	400 $\mu$ s	1000 kHz
4375 $\mu$ s	2.200 GHz	400 $\mu$ s	1000 kHz
5000 $\mu$ s	2.400 GHz	700 $\mu$ s	1000 kHz
7500 $\mu$ s	2.400 GHz	400 $\mu$ s	1000 kHz
8125 $\mu$ s	2.750 GHz	400 $\mu$ s	1000 kHz
10000 $\mu$ s	2.700 GHz	700 $\mu$ s	1000 kHz
11250 $\mu$ s	2.250 GHz	400 $\mu$ s	1000 kHz
11875 $\mu$ s	2.450 GHz	400 $\mu$ s	1000 kHz
15000 $\mu$ s	2.650 GHz	400 $\mu$ s	1000 kHz
15000 $\mu$ s	2.100 GHz	700 $\mu$ s	1000 kHz
15625 $\mu$ s	2.380 GHz	400 $\mu$ s	1000 kHz
16000 $\mu$ s	2.450 GHz	7000 $\mu$ s	4000 kHz

Classifiers/  
Templates  
access  
SAGE Data  
Sequentially

- Classifier 1 (e.g., microwave oven)
- Classifier 2 (e.g., cordless phone type 1)
- Classifier 3 (e.g., Bluetooth™ SCO)
- Classifier 4 (e.g., 802.11)
- Classifier 5 (e.g., infant monitor)
- Classifier (e.g., video camera or other continuous emitter)
- Classifier N

SA Stats Data  
Power Vs. Frequency Data  
Snapshot Data

Old Pulse Events



FIG. 9

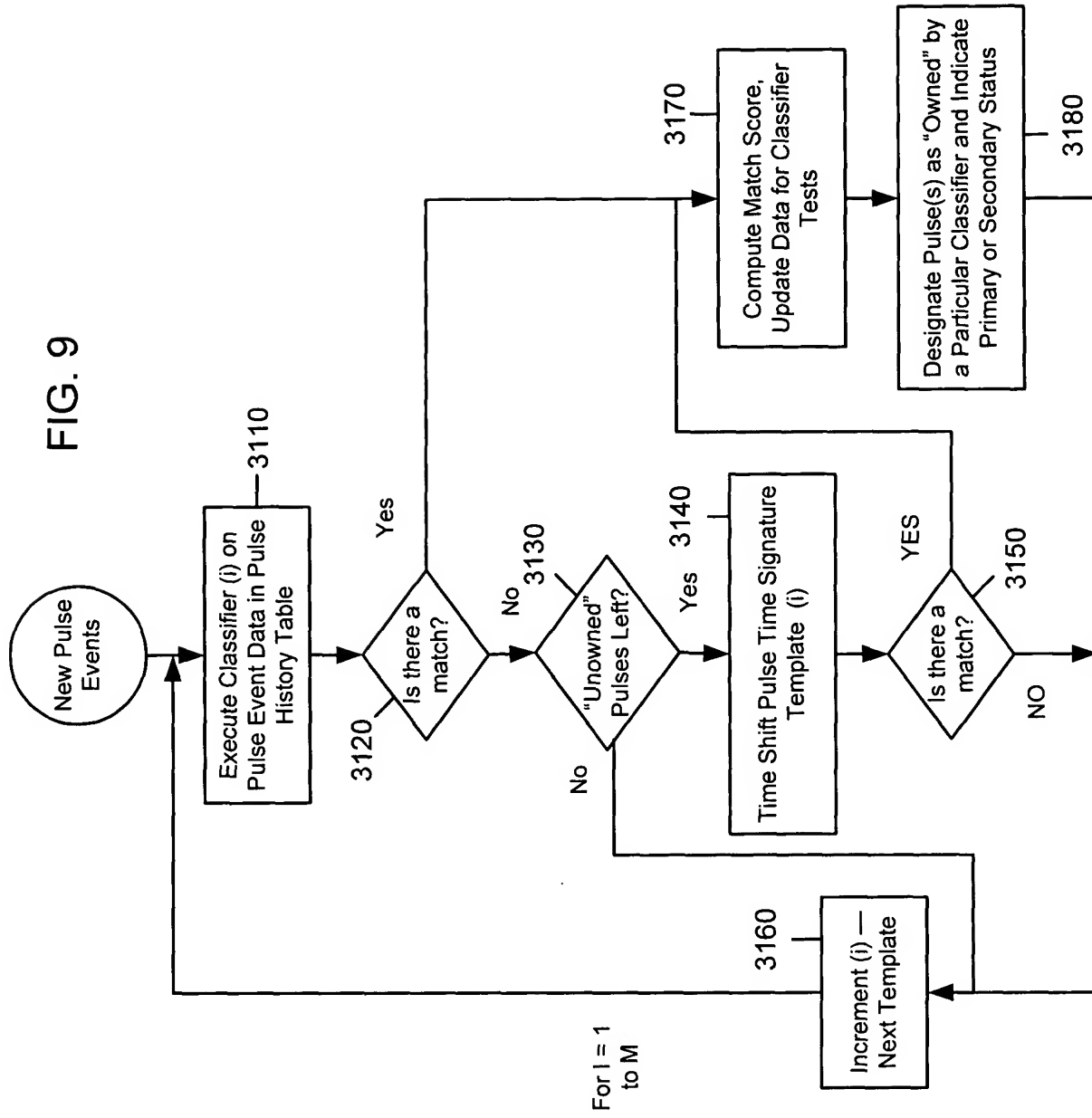


FIG. 10

Pulse Start Time	Pulse Center Frequency	Pulse Duration	Pulse Bandwidth	Classification/Identification
0 $\mu$ s	2.450 GHz	7000 $\mu$ s	4000 kHz	
0 $\mu$ s	2.300 GHz	400 $\mu$ s	1000 kHz	
0 $\mu$ s	2.600 GHz	700 $\mu$ s	1000 kHz	
625 $\mu$ s	2.500 GHz	400 $\mu$ s	1000 kHz	Possible Bluetooth™ SCO pulse related to 400 $\mu$ s pulse at time 0 $\mu$ s
3750 $\mu$ s	2.700 GHz	400 $\mu$ s	1000 kHz	Possible Bluetooth™ SCO pulse related to 400 $\mu$ s pulse at time 0 $\mu$ s and time 625 $\mu$ s
4375 $\mu$ s	2.200 GHz	400 $\mu$ s	1000 kHz	Possible Bluetooth™ SCO pulse related to 400 $\mu$ s pulse at time 0 $\mu$ s, time 625 $\mu$ s and time 3750 $\mu$ s
5000 $\mu$ s	2.400 GHz	700 $\mu$ s	1000 kHz	Possible cordless phone pulse related to 700 $\mu$ s pulse at time 0 $\mu$ s
7500 $\mu$ s	2.400 GHz	400 $\mu$ s	1000 kHz	Possible Bluetooth™ SCO pulse related to 400 $\mu$ s pulse at time 0 $\mu$ s, time 625 $\mu$ s, time 3750 $\mu$ s and time 4375 $\mu$ s
8125 $\mu$ s	2.750 GHz	400 $\mu$ s	1000 kHz	Possible Bluetooth™ SCO pulse related to 400 $\mu$ s pulse at time 0 $\mu$ s, time 625 $\mu$ s, time 3750 $\mu$ s, time 4375 $\mu$ s and time 7500 $\mu$ s
10000 $\mu$ s	2.700 GHz	700 $\mu$ s	1000 kHz	Possible Cordless phone pulse related to 700 $\mu$ s pulse at time 0 $\mu$ s and at time 5000 $\mu$ s (Primary Owner: Classifier 2; Secondary Owner: Classifier Z)
11250 $\mu$ s	2.250 GHz	400 $\mu$ s	1000 kHz	Possible Bluetooth™ SCO pulse related to 400 $\mu$ s pulse at time 0 $\mu$ s, time 625 $\mu$ s, time 3750 $\mu$ s, time 4375 $\mu$ s, time 7500 $\mu$ s and time 8125 $\mu$ s
11875 $\mu$ s	2.450 GHz	400 $\mu$ s	1000 kHz	...
15000 $\mu$ s	2.650 GHz	400 $\mu$ s	1000 kHz	...
15000 $\mu$ s	2.100 GHz	700 $\mu$ s	1000 kHz	Possible Cordless phone pulse related to 700 $\mu$ s pulse at time 0 $\mu$ s, at time 5000 $\mu$ s and at time 1000 $\mu$ s (Primary Owner: Classifier 2; Secondary Owner: Classifier Z)
15625 $\mu$ s	2.380 GHz	400 $\mu$ s	1000 kHz	...
16000 $\mu$ s	2.450 GHz	7000 $\mu$ s	4000 kHz	Possible microwave oven pulse related to 7000 $\mu$ s pulse at time 0 $\mu$ s

FIG. 11

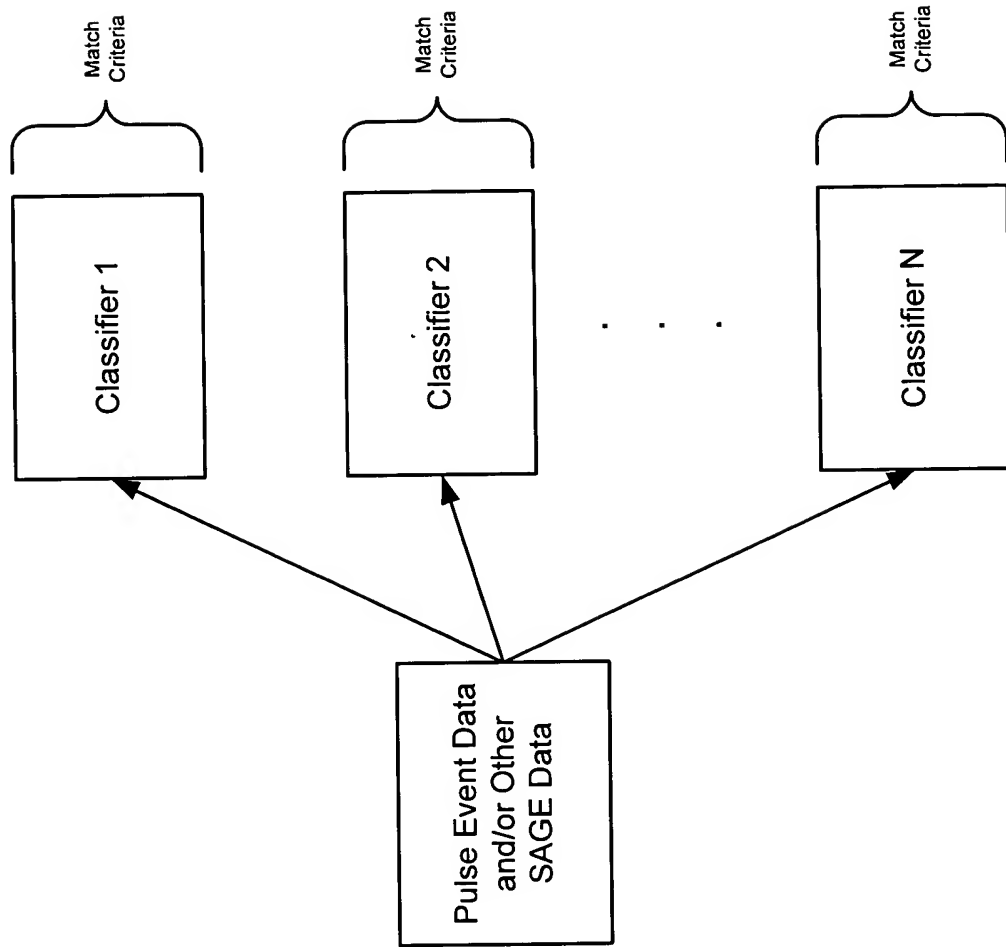


FIG. 12

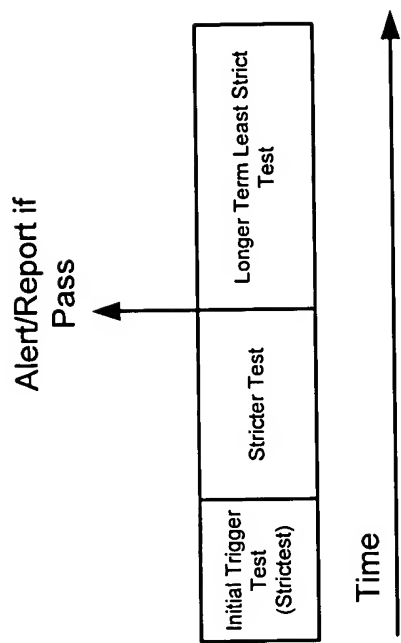


FIG. 13

Exemplary Signal Pulse Templates

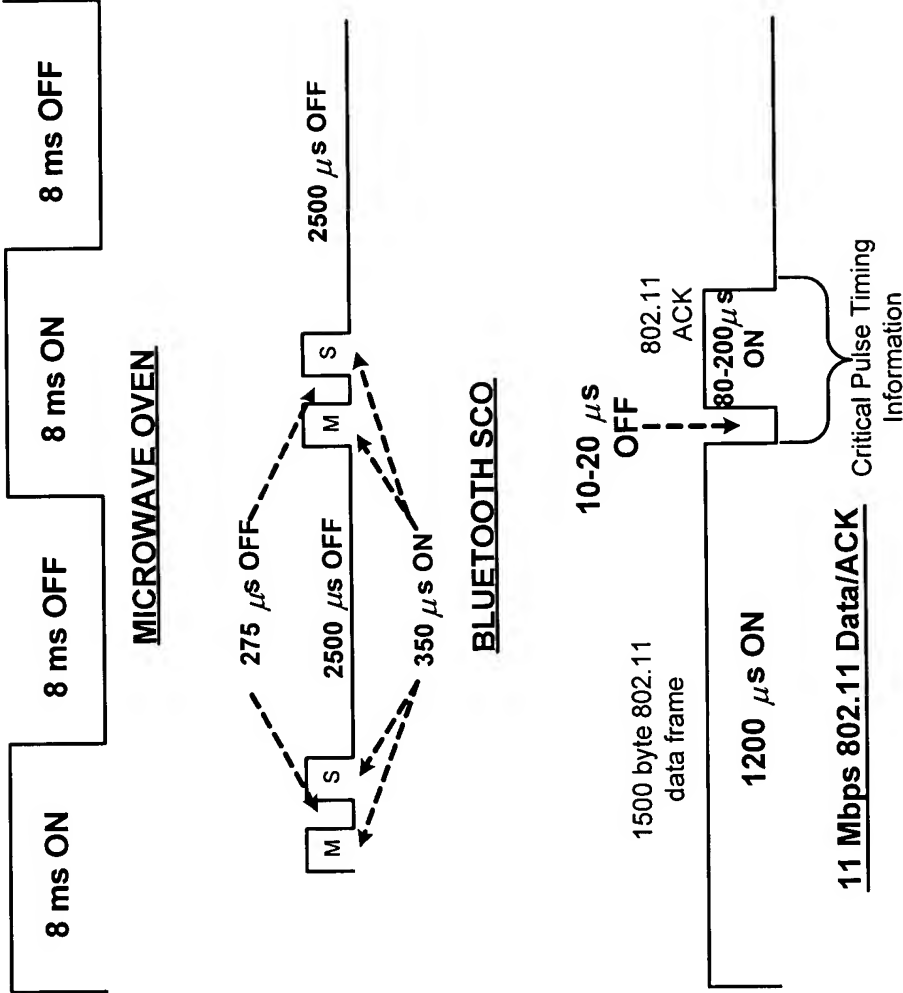


FIG. 14

Pulse History Table

Pulse Start Time	Pulse Center Frequency	Pulse Duration	Pulse Bandwidth
0 $\mu$ s	2.450 GHz	7000 $\mu$ s	4000 kHz
0 $\mu$ s	2.300 GHz	400 $\mu$ s	1000 kHz
0 $\mu$ s	2.600 GHz	700 $\mu$ s	1000 kHz
625 $\mu$ s	2.500 GHz	400 $\mu$ s	1000 kHz
3750 $\mu$ s	2.700 GHz	400 $\mu$ s	1000 kHz
4375 $\mu$ s	2.200 GHz	400 $\mu$ s	1000 kHz
5000 $\mu$ s	2.400 GHz	700 $\mu$ s	1000 kHz
7500 $\mu$ s	2.400 GHz	400 $\mu$ s	1000 kHz
8125 $\mu$ s	2.750 GHz	400 $\mu$ s	1000 kHz
10000 $\mu$ s	2.700 GHz	700 $\mu$ s	1000 kHz
11250 $\mu$ s	2.250 GHz	400 $\mu$ s	1000 kHz
11875 $\mu$ s	2.450 GHz	400 $\mu$ s	1000 kHz
15000 $\mu$ s	2.650 GHz	400 $\mu$ s	1000 kHz
15000 $\mu$ s	2.100 GHz	700 $\mu$ s	1000 kHz
15625 $\mu$ s	2.380 GHz	400 $\mu$ s	1000 kHz
16000 $\mu$ s	2.450 GHz	7000 $\mu$ s	4000 kHz

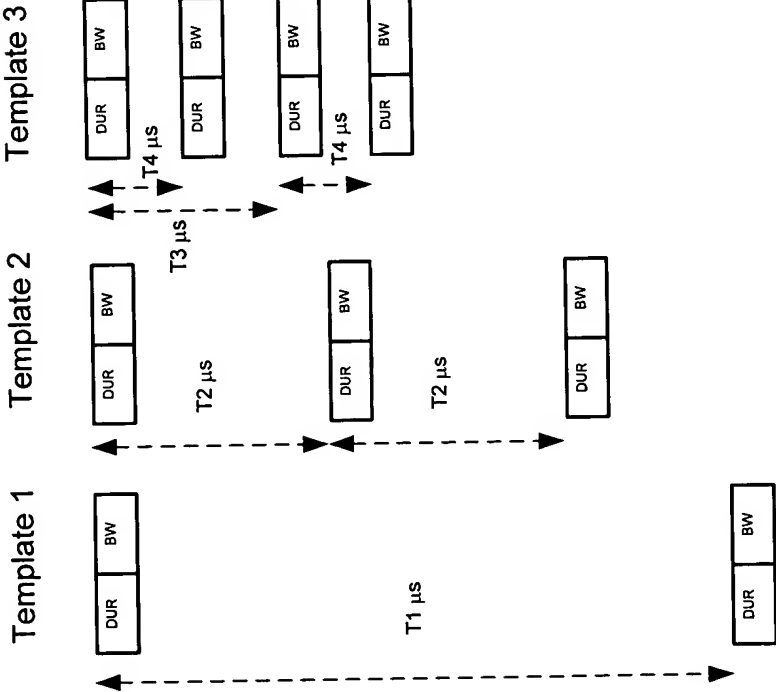
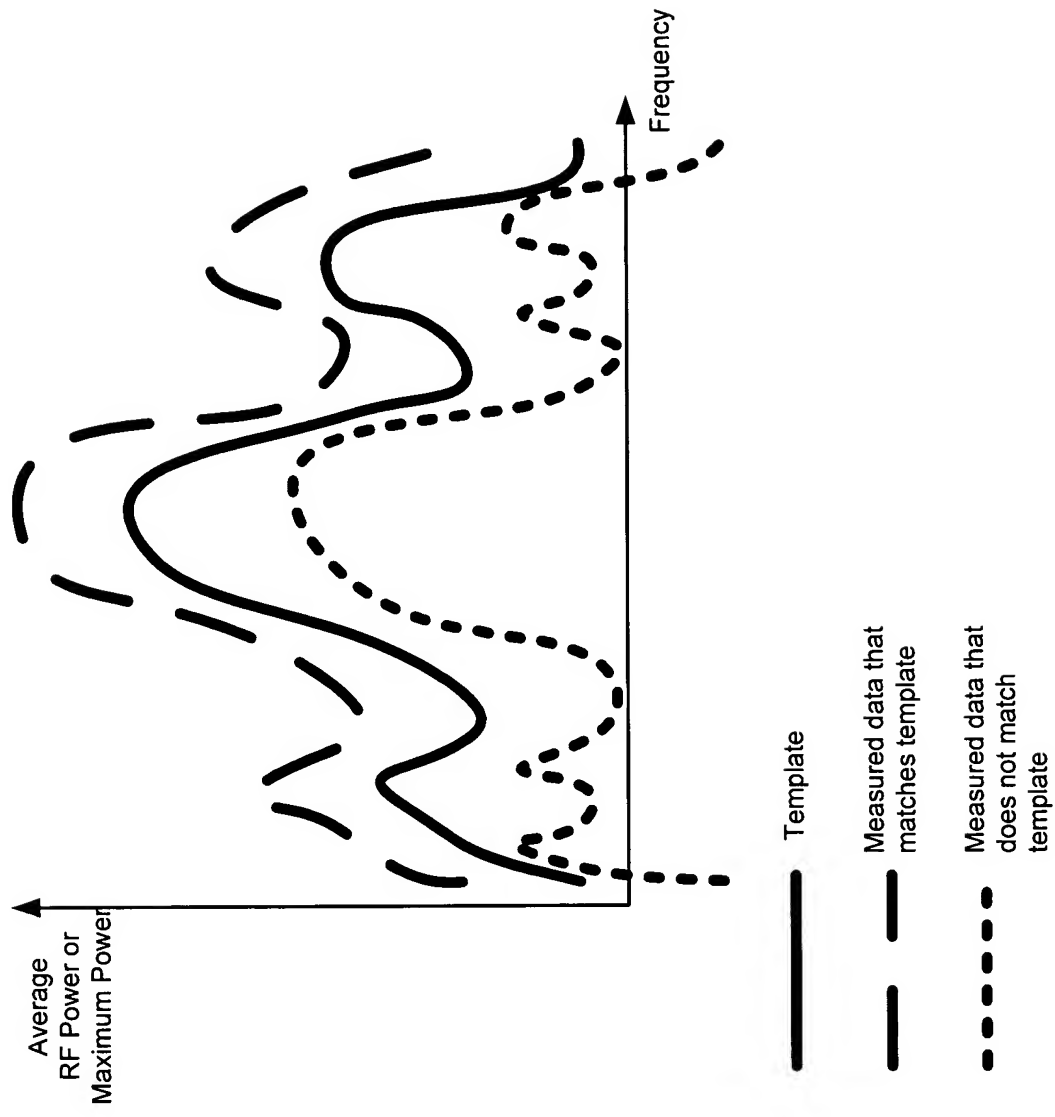


FIG. 15



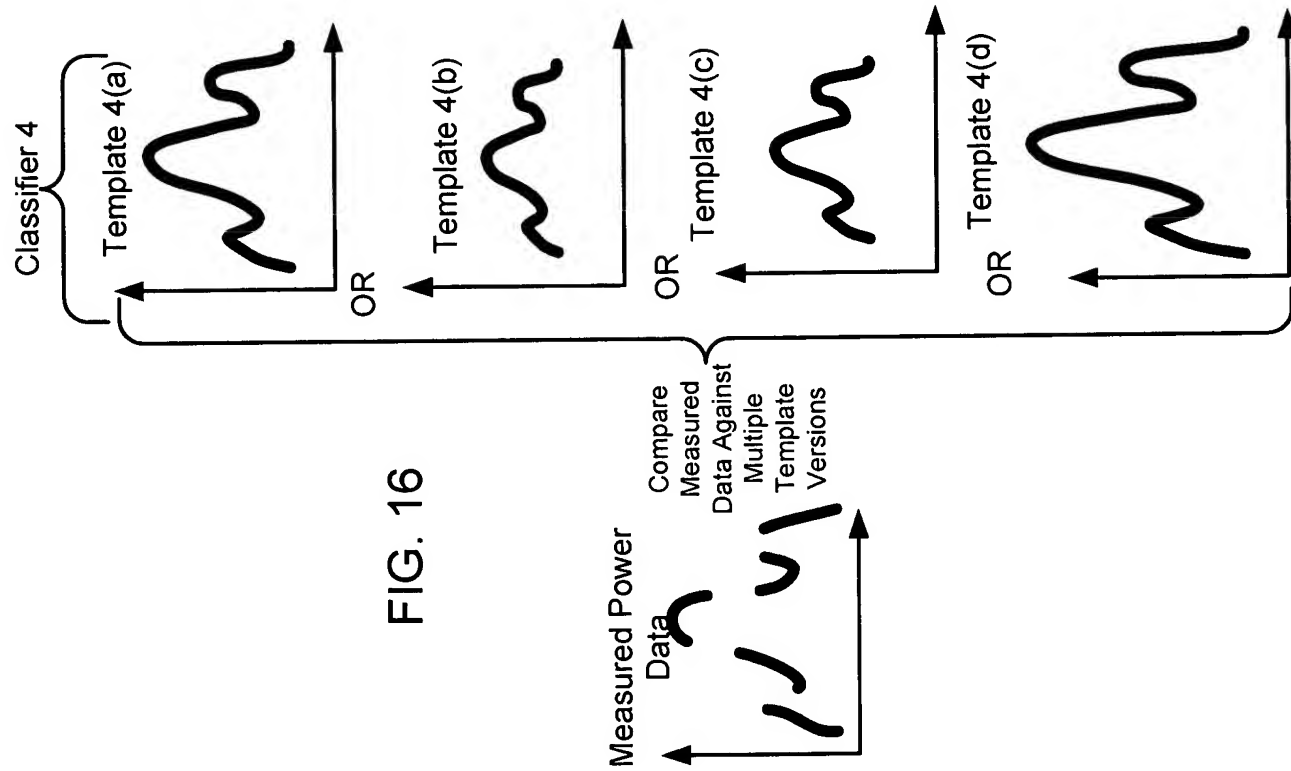


FIG. 16

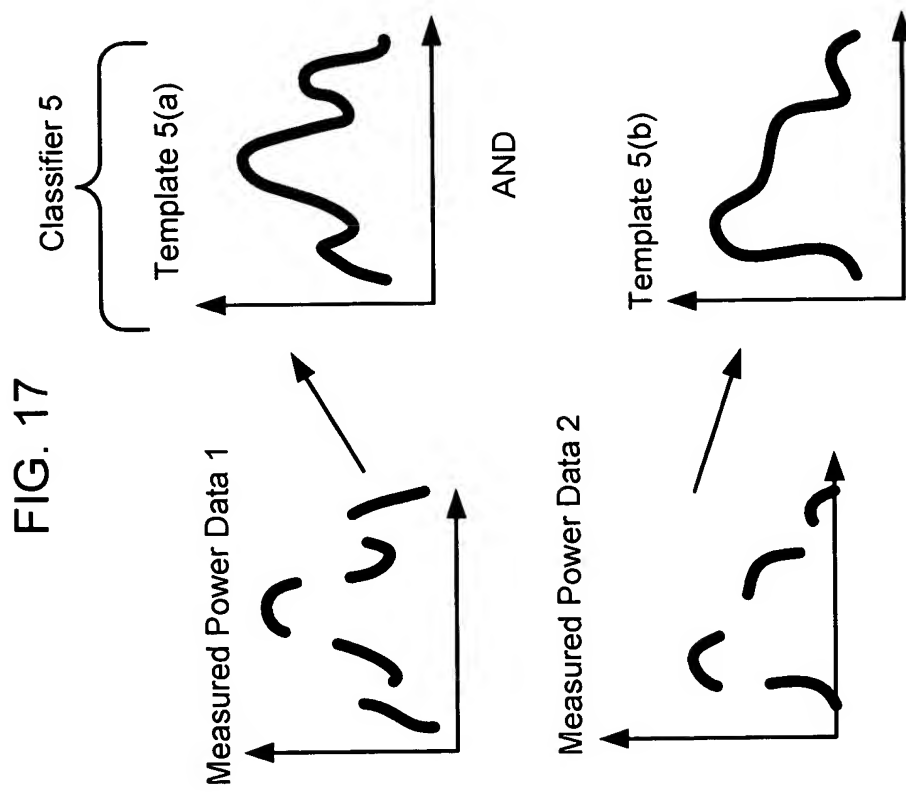


FIG. 17

FIG. 18

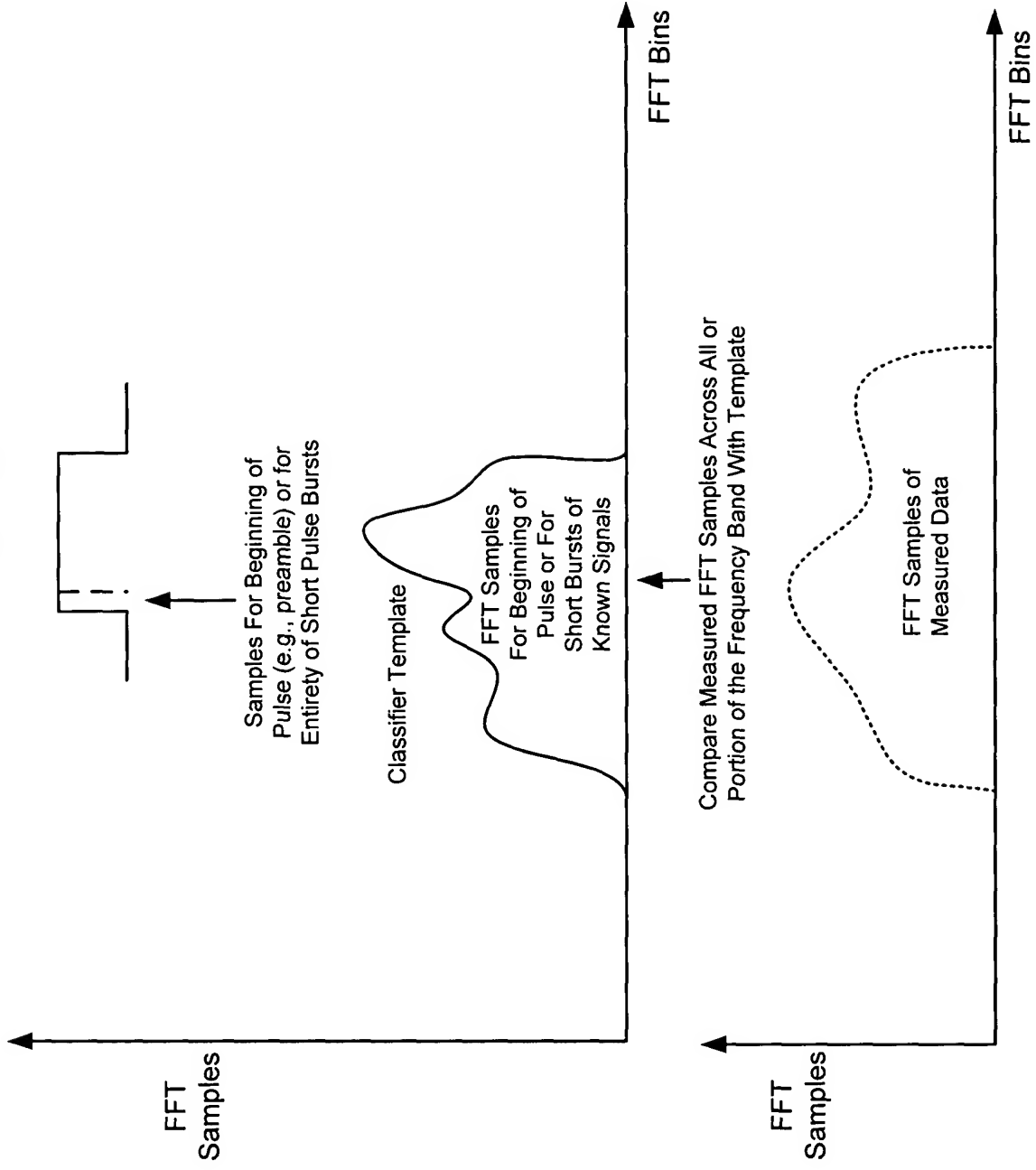




FIG. 19

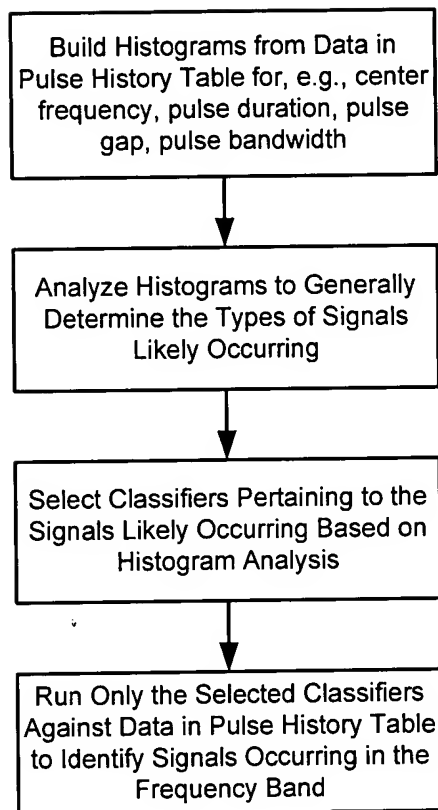
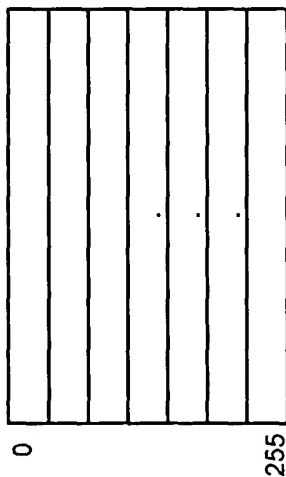
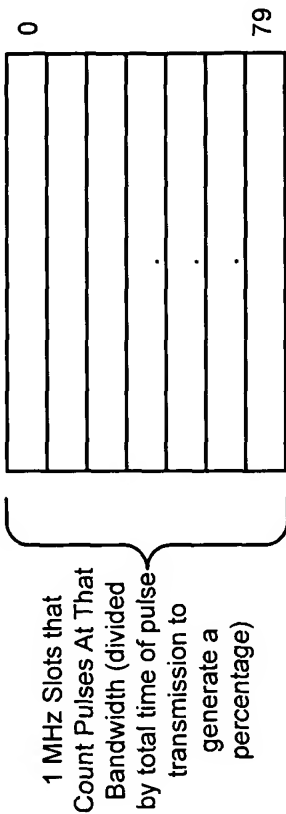


FIG. 20

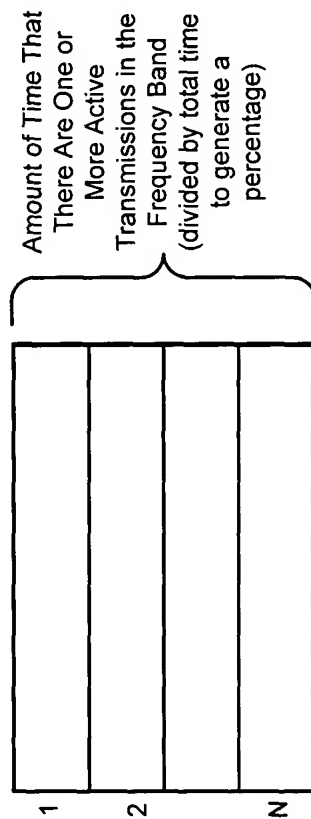
Center Frequency Histogram



Bandwidth Histogram



Active Transmissions Histogram



Pulse Duration/Time Between Pulses Histograms

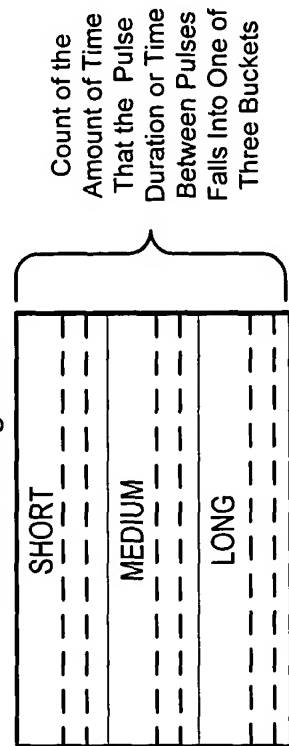


FIG. 21

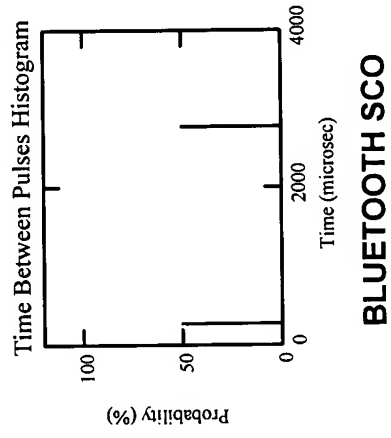
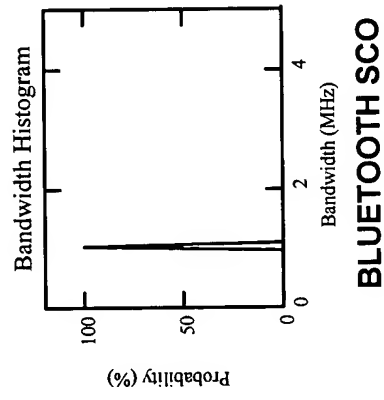
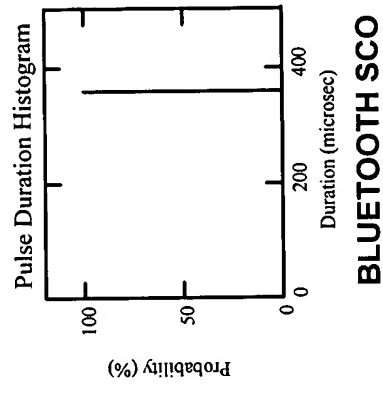
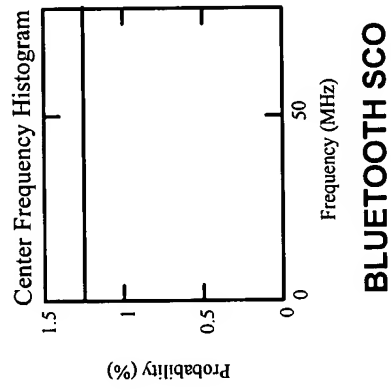


FIG. 22

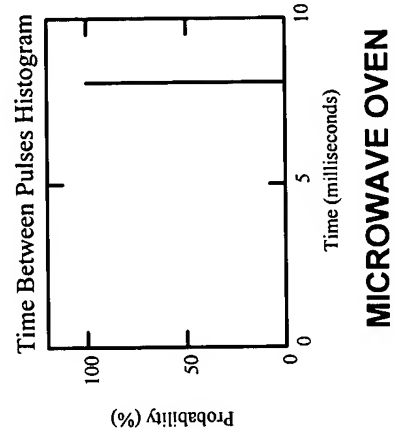
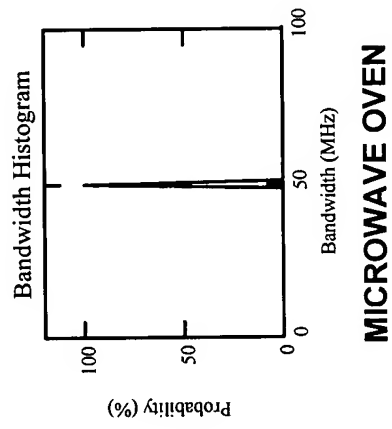
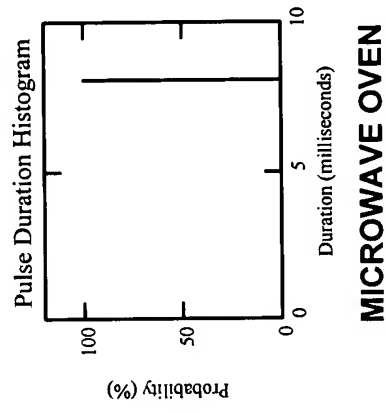
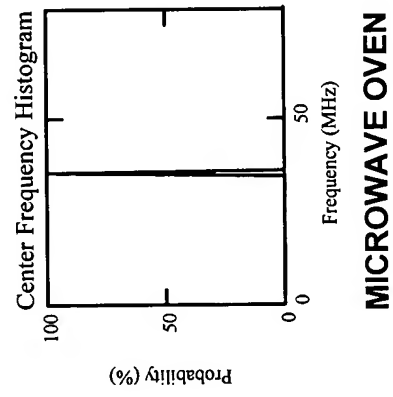


FIG. 23

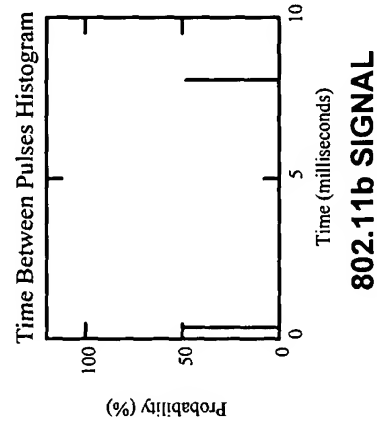
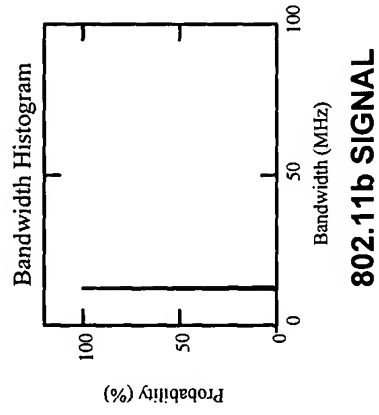
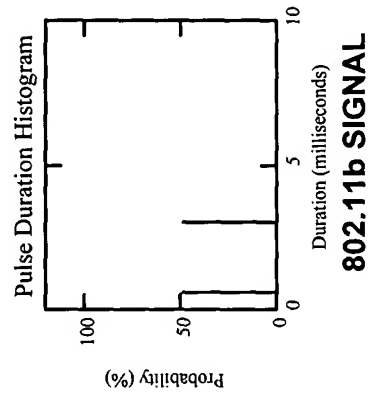


FIG. 24

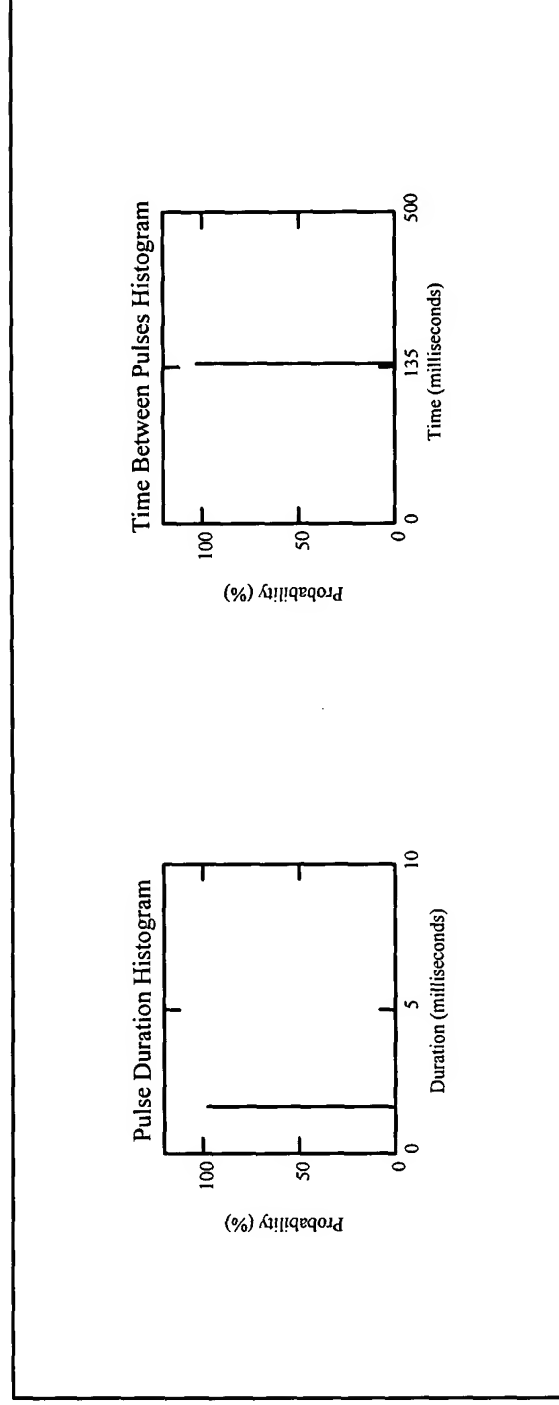


FIG. 25

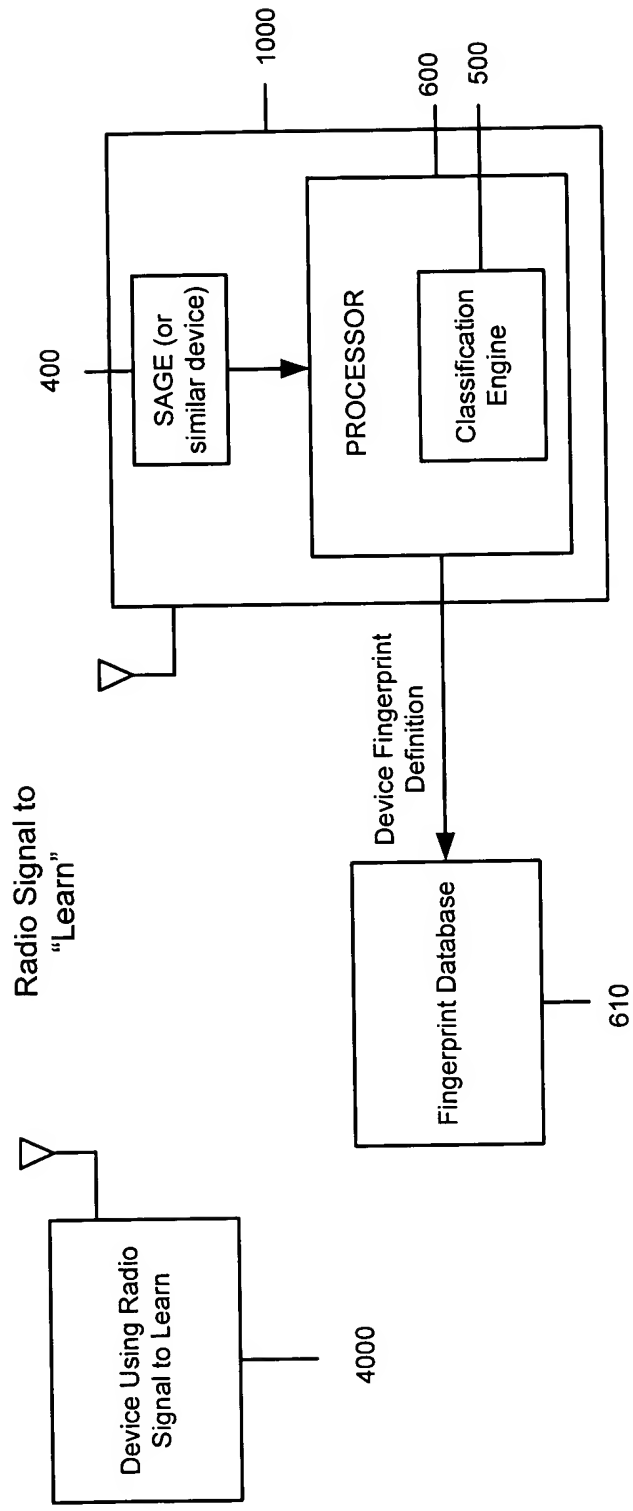


FIG. 26

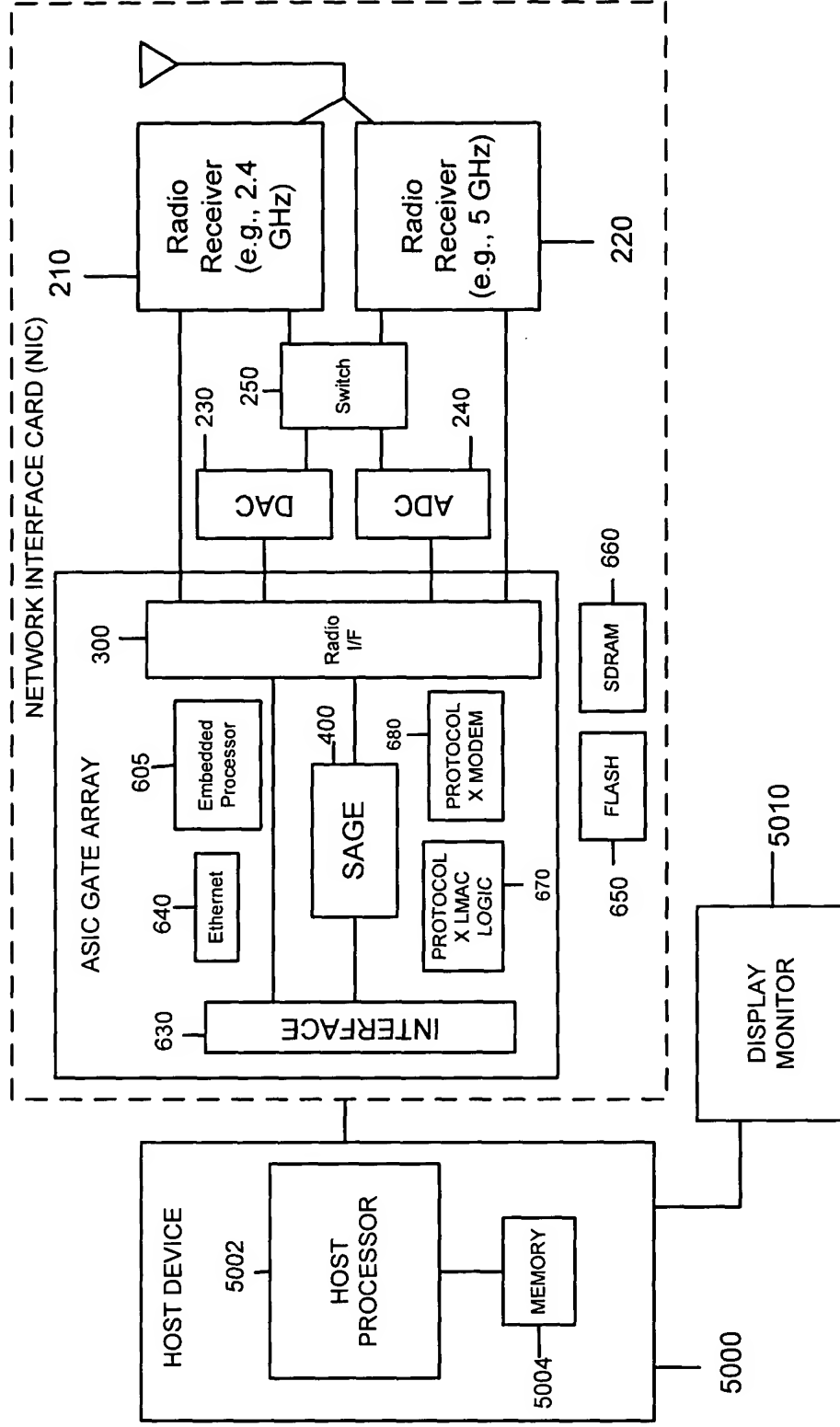




FIG. 27

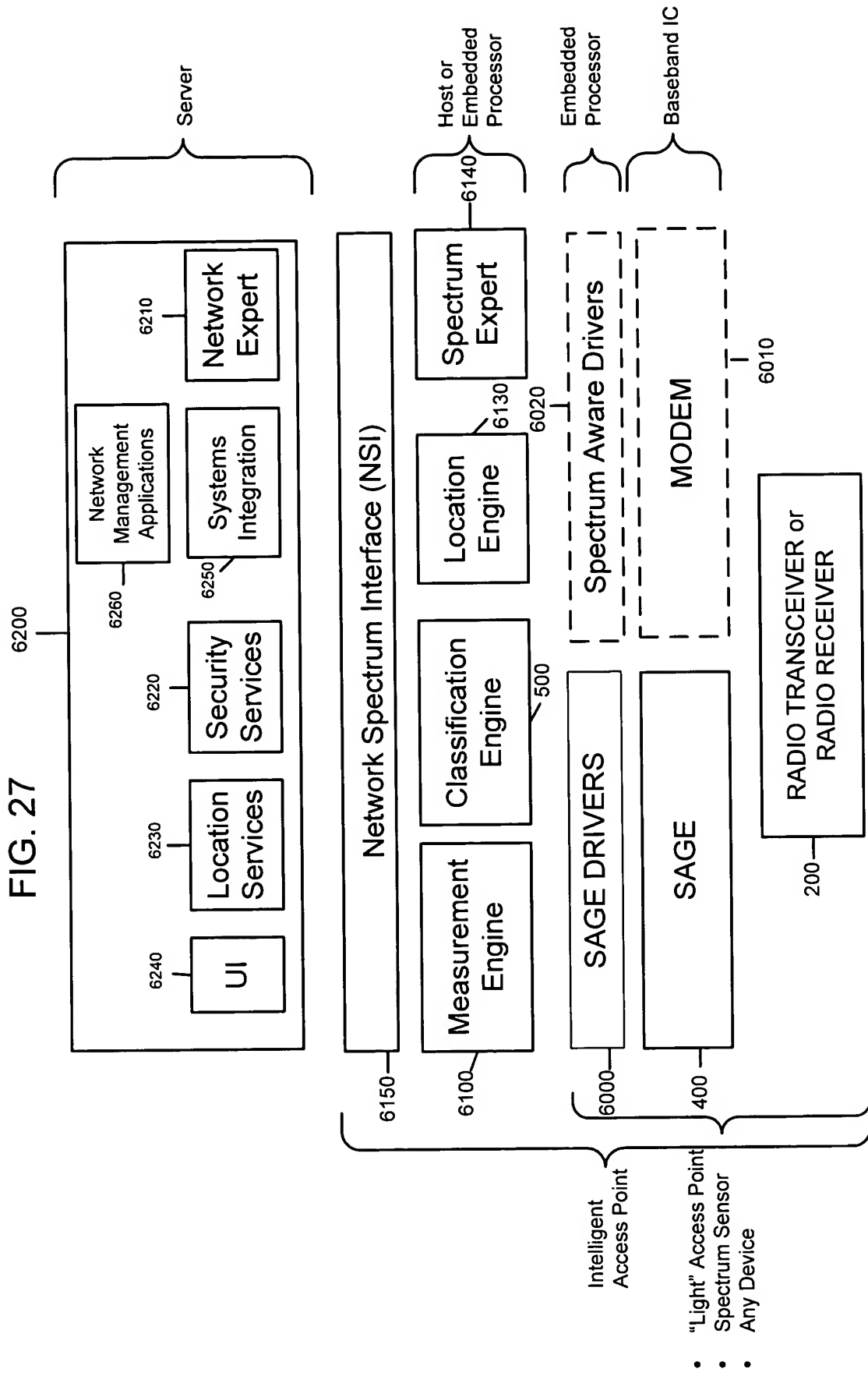
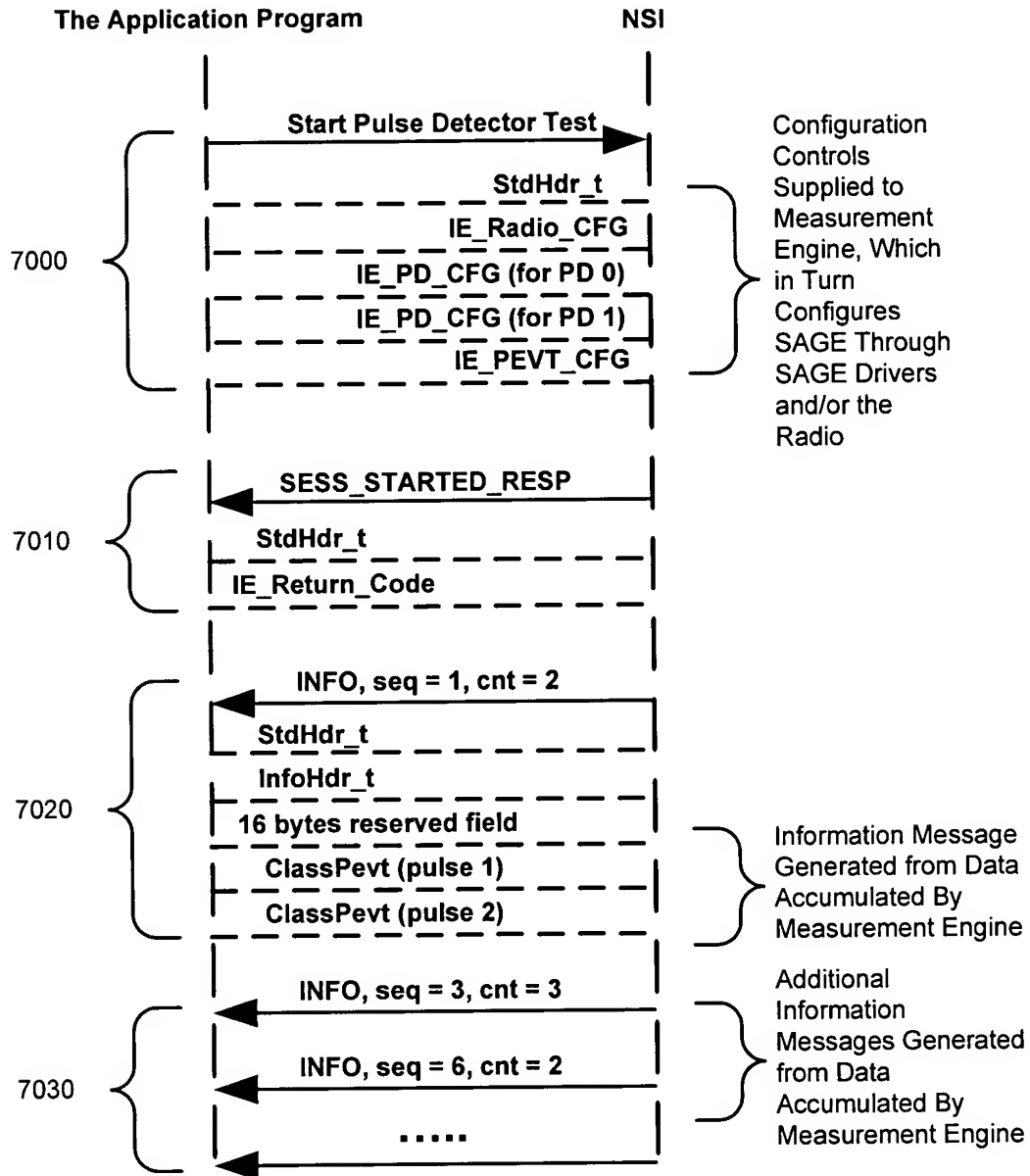
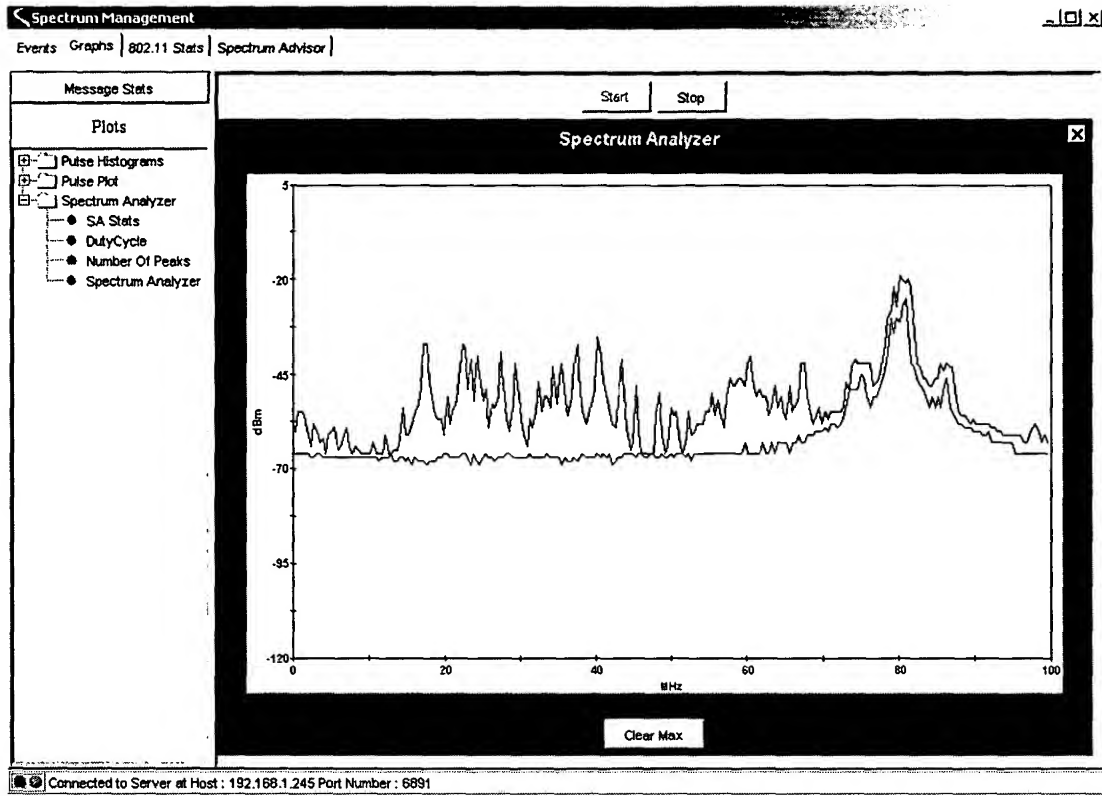


FIG. 28



# FIG. 29



# FIG. 30

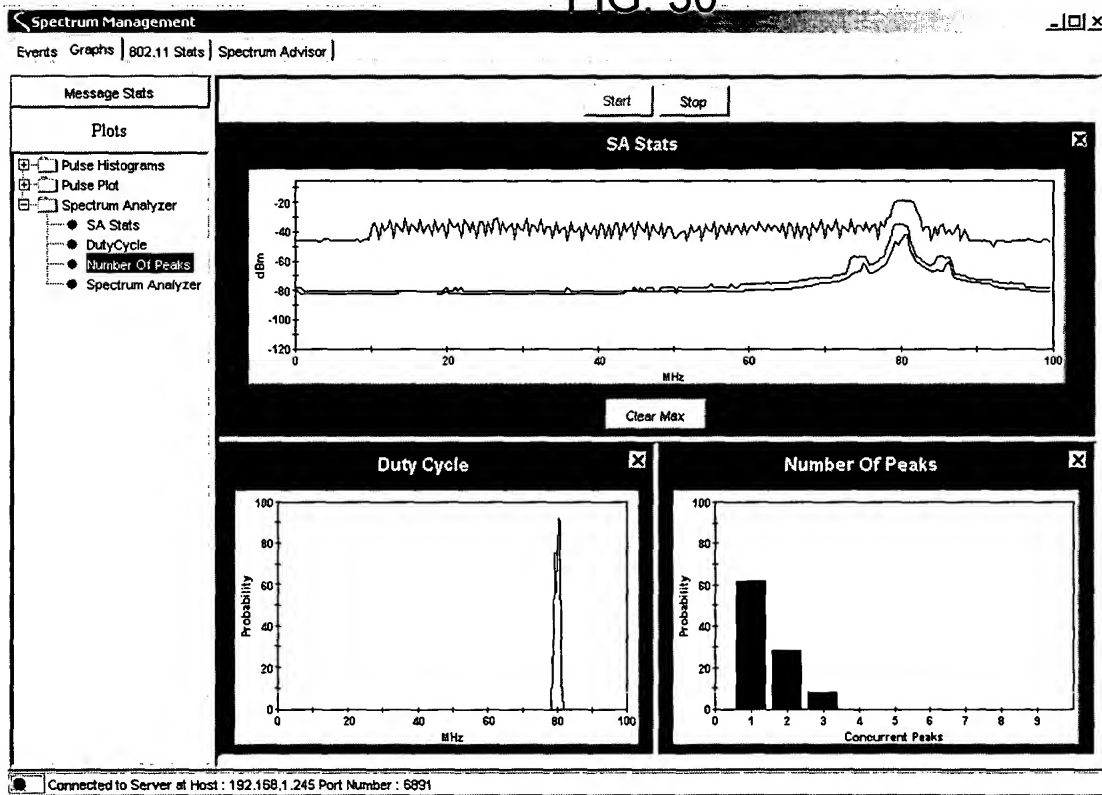


FIG. 31

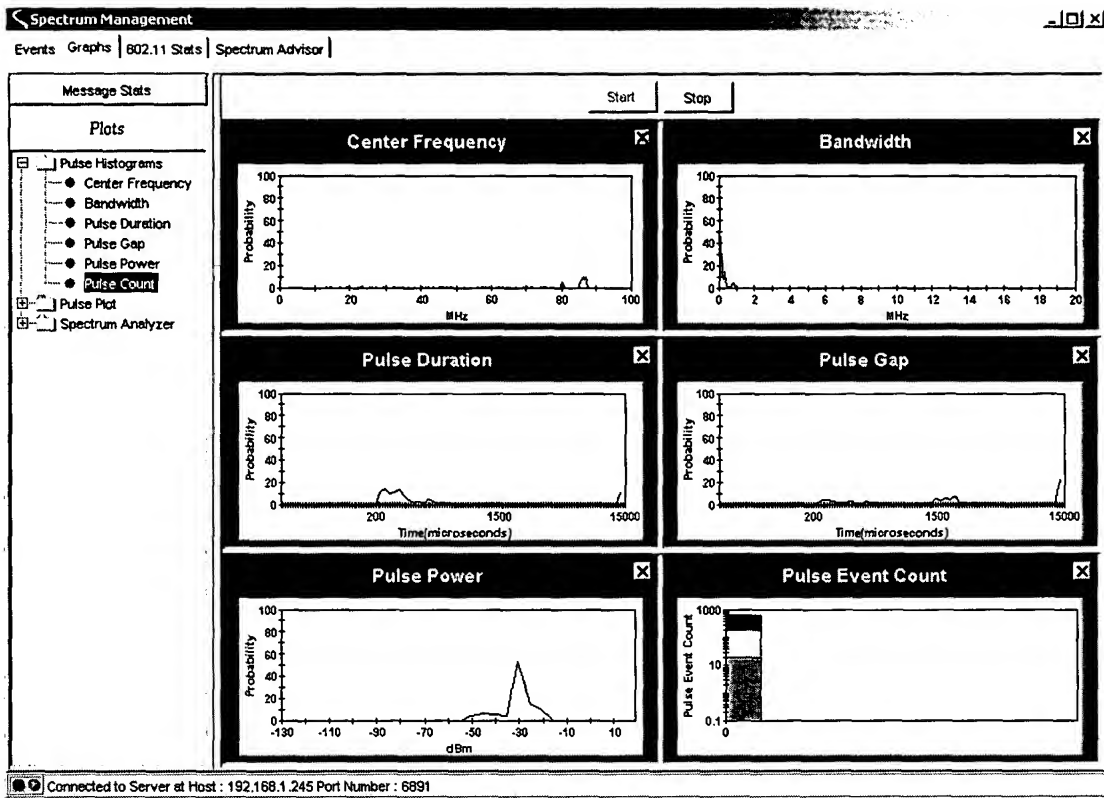


FIG. 32

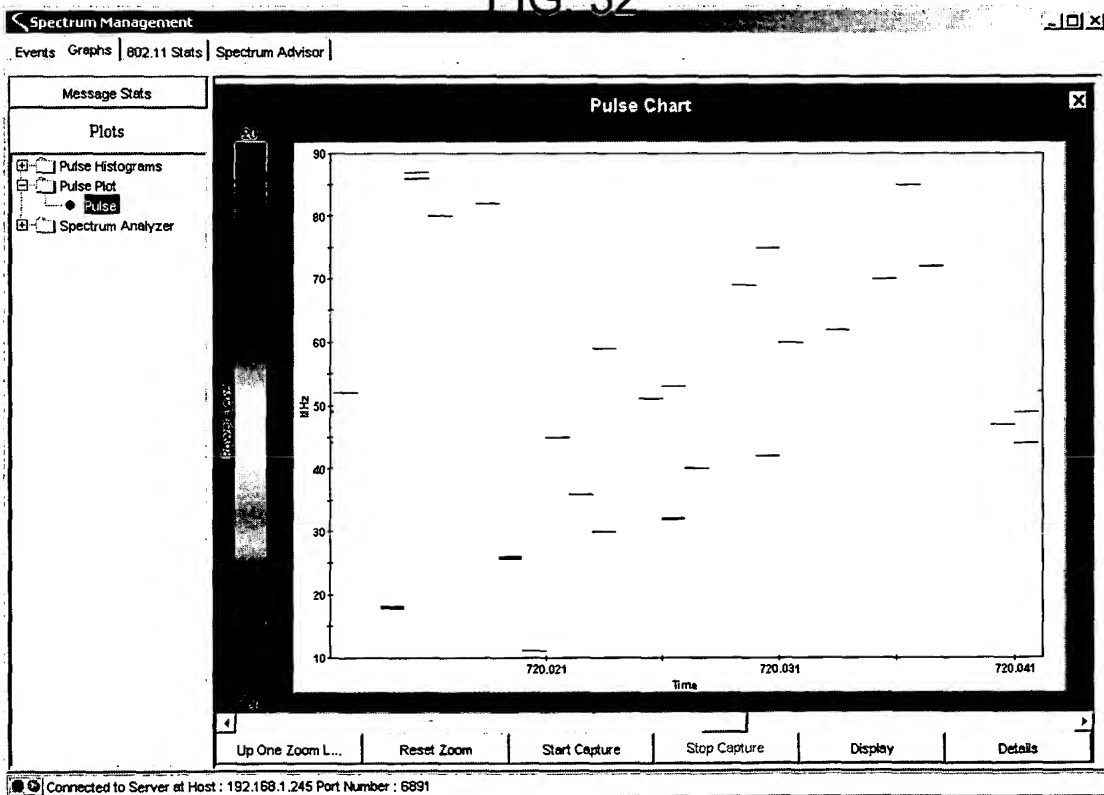


FIG. 33

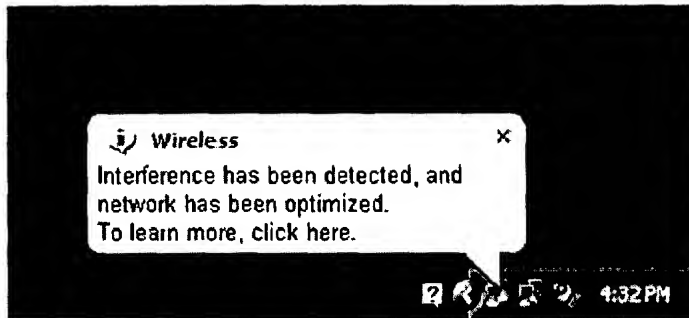


FIG. 34

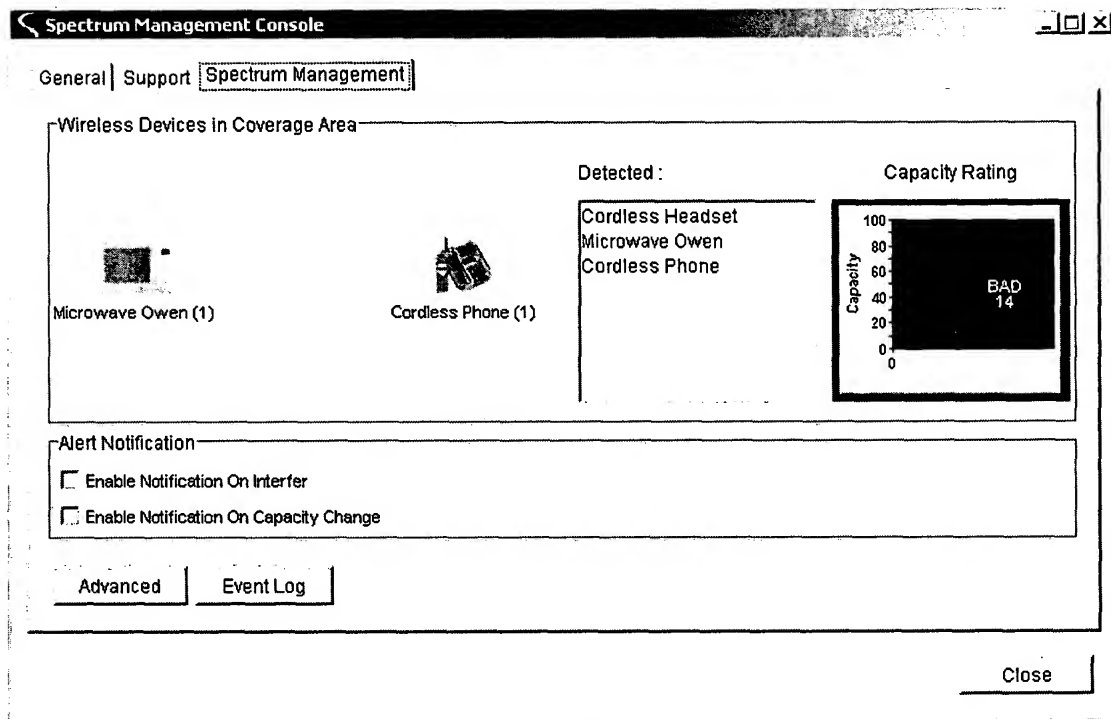


FIG. 35

Event Log							
Alert Level	Type	Message	Date & Time	Time Stamp		ID	Source ID
				sec	usec		
Low	Interferer	MICROWAVE OVEN Turned OFF	11:40:03 03/13/2003	5792	327712	2	0
High	Interferer	BULLET COIL HEADSET Turned ON	11:40:15 03/13/2003	5798	657712	7	0
Low	Interferer	GV CORDLESS PHONE Turned OFF	11:40:19 03/13/2003	5800	855424	4	0
Low	Interferer	MICROWAVE OVEN Turned ON	11:40:43 03/13/2003	5813	1133616	3	0
Low	Interferer	BULLET COIL HEADSET Turned OFF	11:40:48 03/13/2003	5815	921328	6	0
Low	Interferer	GV CORDLESS PHONE Turned ON	11:41:00 03/13/2003	5822	263816	5	0

Connected to Server at host: 127.0.0.1 Port Number: 5691

FIG. 36

Event Properties

Event Properties

Date & Time : 19:12:31 11/18/2002  
Event Time Stamp : 151195575 Event Source ID : 1  
Event Type : Interferer Event ID : 9  
Event Message : Bluetooth detected

Description

A bluetooth device has been detected.  
Power level = -24 dBm.  
Traffic type = SCO

Details

Automatic Spectrum Policy rule 7.0.2 has been triggered:  
802.11 Fragmentation size set to 512 bytes.  
802.11 Data rate has locked to 6 Mbps.

Close

FIG. 37

Event Properties

Event Properties

Date & Time : 19:12:25 11/18/2002  
Event Time Stamp : 151193201 Event Source ID : 1  
Event Type : Interferer Event ID : 7  
Event Message : Cordless Phone detected

Description

A 2.4 Ghz cordless phone has been detected.  
Power level = -16 dBm.  
Traffic type = periodic, 1 ms bursts

Details

If you experience static on your cordless phone, then you can set a policy to prevent your 802.11 traffic from interfering with the phone. Go to the Policy Wizard Tab for more information.

Close